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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/575,599
Filing Date: May 22, 2000
Appellant(s): THIER, ADAM

Kent J. Sieffert
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 29, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-42 and 44-51 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

Group 1 includes claims 1-8, 10-13, 15, 16, 25-29, and 31-34.

Group 2 includes claims 9, 14, 17-24, 30, 35-42, and 44-51.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,067,525	Johnson et al	5-2000
6,430,539	Lazarus et al	8-2002
5,461,699	Arbabi et al	10-1995

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 5-8, 10-13, 15, 16, 25-29, and 31-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al (USPN 6,067,525).

Claims 9, 14, 17-24, 30, 35-42, and 44-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al (USPN 6,067,525), in view of Lazarus et al (USPN 6,430,539).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-8, 10-13, 15, 16, 25-29, and 31-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al (USPN 6,067,525).

Claim 1

Johnson et al discloses storing in a database data (database 116, see figure 10B) defining a mathematical model (data and formula matrix, see column 26, lines 15-18) having a plurality of related objects that represent business opportunities and conditions associated with achieving the business opportunities, (lead generation and sales information, see column 4, lines 35-40) in a database (database 116); receiving input data from a plurality of users (salesperson), wherein the input data indicates a status (status of lead) of at least one of the conditions (sales status and customer buying habits) associated with one of the business opportunities (sales lead); and generating a probability set indicating the probability of successfully achieving the business opportunities as a function of the input data and the mathematical model (probability of closing the sale, see column 21, lines 20-23 and column 26, lines 15-18).

Claims 8 and 29

Johnson et al discloses analyzing the mathematical model with a statistical engine (inference engine, see column 33, lines 63-66).

Claim 10

Johnson et al discloses adaptively adjusting the model in response to the input received from the users (expert system dynamically alters the rules based upon input, see column 33, lines 44-47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9, 14, 17-24, 30, 35-42, and 44-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al (USPN 6,067,525), in view of Lazarus et al (USPN 6,430,539).

Claim 17

Johnson et al discloses storing a mathematical model (data and formula matrix) in a database, wherein the model includes a plurality of objects representing business opportunities (sales leads) and associated conditions for achieving the business opportunities (sales process); receiving input data from a sales organization indicating a status of at least one condition (sales status and customer buying habits) associated

with one of the business opportunities (status of the lead); and storing a first set of probabilities received from a user representing estimated probabilities for achieving the opportunities (probability of closing the sale, stored in sales process tool 1210 see column 21, lines 20-23 and column 26, lines 15-18).

Johnson et al does not disclose calculating a second set of probabilities as a function of the input data, the mathematical model, and the first set of probabilities, wherein second set of probabilities indicate the probability of successfully achieving the business opportunities. Lazarus et al discloses probability theory (conditional probability), including calculating a second probability as a function of a plurality of probabilities, based upon specific input data (i.e., merchant co-occurrence in customer profile, see column 23, lines 18-35) to calculate the probability of success. Both Johnson and Lazarus are concerned with the effective analysis of consumer behavior, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include calculating a second set of probabilities (conditional probability) as a function of the input data, the mathematical model, and the first set of probabilities in Johnson et al, as seen in Lazarus et al, thereby providing a further method to calculate the probability of success of a sales lead in Johnson et al, thus making the system more flexible and robust.

Claim 49

Johnson et al discloses receiving input from a model engineer (data management personnel) defining a model having a plurality of objects interconnected by defined relationships, wherein the objects represent business opportunities and conditions

associated with achieving the opportunities (creation of knowledge database, see column 25, lines 29-34), receiving a set of estimated probabilities for the conditions of the model from the model engineer (probabilities of closing a sales opportunities, see column 26, lines 15-18), and receiving input data from a sales organization indicating current statuses for the conditions (configuration data tool 1202).

Johnson does not explicitly disclose applying the model to compute a posterior distribution for the conditions based on both the estimated probabilities provided by the model engineer and the current statuses for the conditions, wherein a second set of probabilities indicate the probability of successfully achieving the business opportunities, and generating a revenue forecast for the business opportunities based on the computed posterior distribution. Lazarus et al discloses probability theory (conditional probability), including calculating a second probability as a function of a plurality of probabilities, based upon specific input data (i.e., merchant co-occurrence in customer profile, see column 23, lines 18-35) to calculate the probability of success. Both Johnson and Lazarus are concerned with the effective analysis of consumer behavior, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include calculating a second set of probabilities (posterior distribution) as a function of the input data, the mathematical model, and the first set of probabilities in Johnson et al, as seen in Lazarus et al, thereby providing a further method to calculate the probability of success of a sales lead in Johnson et al, thus making the system more flexible and robust.

Claim 50

As per claim 50, Johnson does not disclose P(M|D) = P(M)[P(D|M) / P(D)], where data D represents the current statuses for the conditions, P(M|D) represents the posterior distribution, P(M) represents the model, and P(D|M) is the likelihood of the data D in light of the model M and represents estimate probabilities. However, the Examiner takes Official notice that P(M|D) is simply the conditional probability of (M|D) which is old and well known theory of statistics. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include calculating a second set of probabilities (posterior distribution) using the data and initial probability model seen in Johnson, providing a further method to calculate the probability of success of a sales lead in Johnson et al, thus making the system more flexible and robust.

(11) Response to Argument

In the Appeal Brief, with respect to claim 1, Appellant argues 1) Johnson et al provides no detail regarding the data stored within the data and formula matrix, 2) the data and formula matrix in Johnson et al does not represents a mathematical model of a set of the business opportunities and conditions associated with achieving the business opportunities, 3) there is a fundamental difference between a mathematical model and a matrix, and 4) Johnson et al does not describe generating a probability set as a function of input data from a sales force and the mathematical model.

With respect to argument 1, Appellant argues that Johnson et al provides no detail regarding the data stored within the data and formula matrix, and consequently The Examiner respectfully disagrees with Appellant's assertion. Johnson et al discloses that a data and formula matrix is used to *calculate* the probability of closing a sales opportunity, within the sales processes tool 1210 (column 26, lines 15-18). The sales processes tool 1210 is part of the subsystem 205 as seen in Figure 12. Further, this subsystem 205 receives data from data component 116, via event manager 201A (see Figure 2 and column 8, lines 28-33). As a result, the data and formula matrix receives data from data component 116. Data component 116 includes, inter alia, prices, specifications, competition features, leads, names, financing, and sales programs (column 7, lines 19-27), which is the same data used in the data and formula matrix in order to calculate the probability of closing the sale.

With respect to argument 2, Appellant concludes, based upon argument 1, that the data and formula matrix in Johnson et al does not represents a mathematical model of a set of the business opportunities and conditions associated with achieving the business opportunities also asserts. The Examiner respectfully disagrees and submits, that as seen above, Johnson et al teaches a data and formula matrix used to calculate the probability of closing the sale, wherein the data and formula matrix receives data from data component 116, including sales information in conjunction with lead generation data (i.e., business opportunities and conditions associated), thereby determining the value of the opportunity. Further, Johnson et al dislcoses an objective management module 714, which automatically calculates the probability of closing the

sale with the date and value of each opportunity and process, considering both the sales status and customer buying habits (i.e., business opportunities and conditions, column 21, lines 20-29). Simply stated and contrary to Appellate's assertions, calculating the probability of closing the sale inherently includes a mathematical model, since it would be impossible to calculate anything, otherwise.

In addition, it is important to note that the integrated automated system of Johnson et al receives and dissemenates data via the event manager 201A. Appellate argues that Figure 10B is not related to the data and formula matrix. The Examiner respectfully disagrees and submits that Figure 10B is a depiction of a portion of data component 116, which as explained above, is where the data and formula matrix receives its input, via event manager 201A.

With respect to argument 3, Appellant argues that there is a fundamental difference between a mathematical model and a matrix, and Appellant goes on to provide definitions of each. The Examiner would also point out the terms, *formula* and *calculate*. In Johnson et al the data and *formula* matrix is used to *calculate* probabilities. Both of these terms are clearly associated with mathematics and a mathematical model. Further, as seen in Merriam-Webster's Collegiate Dictionary 10th Edition, a matrix is defined as an array of mathematical elements that can be combined to form sums and products. Hence, Johnson et al indeed discloses a mathematical model.

With respect to argument 4, the Examiner respectfully submits that Johnson et al indeed discloses generating a probability set as a function of input data from a sales

force and the mathematical model. As discussed above, Johnson et al discloses calculating the probability of closing a sales opportunity.

In the Appeal Brief, with respect to claim 10, Appellant argues that the cited passage of Johnson et al (column 33, lines 44-47) is entirely unrelated to updating a mathematical model in response to input received from the user. The Examiner respectfully disagrees and submits that the Johnson et al reference must be examined in its entirety, in order to determine anticipation. Further, Johnson et al discloses a sales and processes data tool 1210, provided to create, edit, and maintain data elements used to support the objective management module (column 26, lines 9-12), thereby disclosing Appellant's claim 10, wherein the model may be adjusted in response to input from a user. In addition, the expert system of Johnson (column 33, lines 44-47) is able to mimic the input of the user by modifying rules in order to initiate events or actions in similar subsequent sales processes.

In the Appeal Brief, with respect to claims 8 and 29, Appellant argues that a rule-based inference engine is entirely different from a statistical engine that generates a probability set. The Examiner respectfully disagrees, and submits that the inference engine is incorporated into the expert system 2002, which is able to dynamically update the probability of the sale (column 35, lines 22-24). Here, the expert system in Johnson equates to a statistical engine, therefore Johnson et al indeed discloses generating a probability set.

In the Appeal Brief, with respect to claim 17, Appellant argues 1) the Examiner is construing Johnson inconsistent with the previous assertion with respect to the

anticipation rejection, and 2) Lazarus et al does not disclose calculating a second set of probabilities.

With respect to argument 1, the Examiner respectfully disagrees with Appellant's assertion and submits that the use of the Johnson et al is indeed consistent. Johnson et al discloses the opportunity status, including stated predictions of a close, as calculated by the system or inputted via user-estimated basis (column 21, lines 43-48). As a result, Johnson et al indeed discloses storing probabilities received from a user.

With respect to argument 2, the Examiner respectfully submits that Lazarus et al discloses analyzing and predicting consumer financial behavior based upon historical data (column 3, lines 1-4). This data is then input into a predictive model to generate an amount of spending a consumer would have at a particular merchant (column 11, lines 47-50). Further, Lazarus et al discloses input including variables and statistics for a consumer (column 29, lines 54-58) in order to calculate a segment probability score, which is a Bayesian method (as disclosed by Appellant, with respect to claim 50, seen below) in order to determine the probability that a consumer will spend a certain amount. As discussed below, with respect to claim 50, Bayesian theory is used to calculate new probabilities, based upon other probabilities, therefore Lazarus et al indeed discloses calculating a second set of probabilities as a function of input data and a first set of probabilities. Modifying Johnson et al to include the use of the Bayesian theory, as seen in Lazarus, indeed results in calculating a second set of probabilities as a function of the input data, the mathematical model, and the first set of probabilities, all of which are taught by Johnson et al, as seen above.

In addition, Appellant purports to have claimed a "two-stage" process for statistically quantifying and objectively forecasting revenue. The Examiner respectfully disagrees, and submits that Appellant has not claimed a "two stage" process, either explicitly or implicitly. Appellant's claimed invention merely calculates a probability based upon inputted data, as taught by Johnson et al in view of Lazarus et al, as discussed above.

In the Appeal Brief, with respect to claim 49, Appellant argues neither of the references teach or suggest Appellant's two-stage process for statistically forecasting revenue and generating a revenue forecast. The Examiner respectfully disagrees with Appellant's assertion, as seen above.

In the Appeal Brief, with respect to claim 50, Appellant argues that the Examiner simply took official notice that conditional probability is old and well known theory of statistics and failed to offer any evidence in support of the conclusion. The Examiner respectfully submits that Appellant's equation in claim 50 is merely Bayes' theorem (as disclosed in Appellant's specification, page 6, lines 22-24), which is a form of conditional probability, wherein probabilities can be revised based on new information. Bayes' theorem can be found in statistic's books, for example, Statistics for Modern Business Decisions 3rd Edition by Lawrence Lapin, HBJ publishing, 1981, on page 146. As a result, this technique could indeed be applied to the Johnson system in order to update the probabilities of closing a sale.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Andre Boyce

adb
June 22, 2004

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